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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Christian DUJARRIC

Appln. No.: 09/534,196

Confirmation No.: 2963

Filed: March 24, 2000

Docket No: Q58472

Group Art Unit: 3746

Examiner: M. Koczo, Jr.

For: ROCKET ENGINE NOZZLE COMPRISING A JET SEPARATION CONTROL SYSTEM

INTERVIEW AGENDA - draft

MAIL STOP NON-FEE AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Prior to the interview scheduled for August 14, 2003, Applicant provides the Examiner with the following agenda and proposals. Additionally, Applicant solicits any further proposals that the Examiner believes would advance prosecution for this application.

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

2. (previously presented) A rocket engine as claimed in claim 14, wherein the separation triggering elements comprise:

injection orifices positioned for injecting fluid through a wall of the nozzle body; and

at least two independent injection orifices being distributed over the perimeter of the wall of the nozzle body, each of the injection orifices constituting a discrete separation triggering element that induces a distinct zone of jet separation.

3. (previously presented)A rocket engine as claimed in claim 2, wherein the injection orifices are uniformly distributed over the perimeter of the wall of the nozzle body.

4. (currently amended) A rocket engine as claimed in claim 14, wherein the injection orifices ~~comprise at least~~ consists of two, which are symmetrically positioned around the circumference of said divergent nozzle body.

5. (currently amended) A rocket engine as claimed in claim 3, wherein the injection orifices ~~comprise~~consists of [[3]]three in number and are arranged at substantially 120° to one another over the perimeter of the nozzle body.

6. (previously presented)A rocket engine as claimed in claim 2, wherein said injection cross section is arranged at distance D from the throat which is substantially less than a distance D_0 of a location of spontaneous separation of the flow at sea level.

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7. (previously presented)A rocket engine as claimed in claim 6, said means for simultaneously injecting comprising:

a plurality of injectors situated at different distances from the throat for simultaneously injecting said fluid; and

a distributing device for selectively feeding said injectors at different cross sectional locations to take into account the variation of said distance of spontaneous separation of the flow as a function of altitude.

14. (currently amended) A rocket engine comprising:

a combustion chamber;

a throat; and

a divergent nozzle body downstream of said throat, said nozzle body having an axis and a control system for controlling jet separation of a flow in the nozzle body, said ~~thrust~~throat being parallel with the axis of the nozzle body,

wherein said control system comprises,

a plurality of mutually spaced separation triggering elements positioned on an injection cross section of the divergent nozzle body perpendicular to the axis of the nozzle body, and

a means for simultaneously injecting fluid through the mutually spaced separation triggering elements of said injection cross section of the divergent nozzle body, for forming a three-dimensional separation of said flow, and for generating distinct zones of jet separation corresponding to the spaced separation triggering elements from a respective plurality of mutually spaced initiation points positioned in the divergent nozzle body, wherein said

separation triggering elements are spaced so that said injection having said distinct zones of jet separation occurs through the separation triggering elements.

15. (currently amended) The rocket engine as claimed in claim 14, wherein the nozzle body is ~~conical~~divergent from said throat to a distal end of said nozzle body, and said distinct zones of jet separation are conical in shape.

16. (currently amended) The rocket engine of claim 14, wherein said a plurality of mutually spaced separation triggering elements ~~comprises~~consists of two mutually spaced separation triggering elements.

17. (currently amended) The rocket engine of claim 14, wherein said a plurality of mutually spaced separation triggering elements ~~comprises~~consists of three mutually spaced separation triggering elements.

18. (previously presented)The rocket engine of claim 14, wherein said a plurality of mutually spaced separation triggering elements comprises at least three mutually spaced separation triggering elements.

19. (New) A rocket engine comprising:

a combustion chamber;

a throat; and

a divergent nozzle body downstream of said throat, said nozzle body having an axis and a control system for controlling jet separation of a flow in the nozzle body, said throat being parallel with the axis of the nozzle body,

wherein said control system comprises,

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a plurality of mutually spaced separation triggering elements positioned on an injection cross section of the divergent nozzle body perpendicular to the axis of the nozzle body said separation triggering elements comprising,

injection orifices positioned for injecting fluid through a wall of the nozzle body; and

at least two independent injection orifices being distributed over the perimeter of the wall of the nozzle body, each of the injection orifices constituting a discrete separation triggering element that induces a distinct zone of jet separation, and

a means for simultaneously injecting fluid through the mutually spaced separation triggering elements of said injection cross section of the divergent nozzle body, for forming a three-dimensional separation of said flow, and for generating distinct zones of jet separation corresponding to the spaced separation triggering elements from a respective plurality of mutually spaced initiation points positioned in the divergent nozzle body, wherein said separation triggering elements are spaced so that said injection having said distinct zones of jet separation occurs through the separation triggering elements,

wherein the injection orifices are uniformly distributed over the perimeter of the wall of the nozzle body, and the injection orifices consist of three in number and are arranged at substantially 120° to one another over the perimeter of the nozzle body.

201. (New) The rocket engine of claim 14, wherein said divergent nozzle body portion has an area ratio of 140.

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POINTS OF DISCUSSION

I. Drawings, objections

Applicant proposes to demonstrate the disclosure of the subject matter recited in claim 15 in the drawings, and show how the aforementioned proposed claim amendments overcome the Examiner's claim objections.

II. 35 U.S.C. § 112

Applicant proposes further discussion of the following claimed features, as well as a discussion of the proposed claim amendments:

"mutually spaced separation triggering elements"

"three dimensional separation of flow" (as related to minimum spacing)

Also, discussion of the "other factors" (e.g., pressure) and their discussion in the specification, and the exact requirements of 35 U.S.C. § 112 for this point, should be discussed.

For the § 112, 2nd paragraph end of claim 14, Applicant proposes to amend claim 14 as shown above. Further, Applicant believes that it may be necessary to discuss further changes to claim 14, and if so, would appreciate any input from the Examiner.

III. Prior art rejections

Applicant proposes to discuss features of claims 4, 5, 7, 16 and 17, based on the foregoing proposed amendments, as well as new claims 19 and 20. All of these claims are believed to be distinguishable from the prior art of record. Applicant proposes to discuss these points, and obtain further clarification from the Examiner as necessary.

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Subject	Interview Agenda; proposal		
Our Ref	Q58472	Your Ref	**USSN 09/534196**
Pages (including cover sheet)	7		

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